

Panel on Government-Sponsored Enterprises

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In a speech in March of last year, “Housing in the Economy,” I argued that the capital positions of only about 3½ percent of assets maintained by the housing GSEs and the ambiguity of the status of these firms creates a risk of financial instability.¹ My purpose today is to amplify that argument. My discussion will apply directly to Fannie Mae, Freddie Mac and the Federal Home Loan Banks. However, I will draw primarily on published material from Fannie Mae and Freddie Mac because I am more familiar with these firms than with the Home Loan Banks. For convenience, I’ll refer to Fannie Mae and Freddie Mac jointly as “F-F”; most of my analysis applies equally to both firms.

Before proceeding, I want to emphasize that the views I express here are mine and do not necessarily reflect official positions of the Federal Reserve System. I thank my colleagues at the Federal Reserve Bank of St. Louis, especially Frank A. Schmid, senior economist in the research division, who provided valuable assistance. However, I retain full responsibility for errors.

IMPERFECT INFORMATION AND AMBIGUITY AS SOURCES OF MARKET CRISES

Market crises are well understood at a descriptive level, but their underlying causes are something of a mystery. To gain a better perspective on market crises, I urge every market participant

to read the classic by Charles P. Kindleberger, *Manias, Panics and Crashes: A History of Financial Crises* (Fourth Edition. John Wiley and Sons, 2001).

After reading Kindleberger and observing crises in real time, many believe that crashes and crises are created by irrational market behavior. A crisis pattern seems to occur over and over again. Investors are seized by a sudden fear of losses and they engage in a mad scramble to sell suspect assets and convert them into highly liquid, safe assets.

There may be an element of irrational behavior at the time of a market crisis; however, I believe that at least as important is that investors lack the full information necessary to make reasoned judgments. Moreover, some crashes are fully rational, such as the collapse of Enron. The mystery, in my view, is not that crises occur but that during the months and sometimes years preceding a crisis investors seem blissfully unaware of the risks they are running.

Some crises, such as the one that brought down Enron, are well contained and do not spread to other firms. Others, such as Long Term Capital Management, have wider effects. There is no question but that a crisis affecting either Fannie Mae or Freddie Mac would have widespread effects because these firms are so large.

I want to emphasize that, on the basis of information I have, no crisis is at hand in the market for GSE obligations. However, it does seem to me that investors have priced these obli-

¹ Federal Reserve Bank of St. Louis *Review*, May/June 2003, 85(3), pp. 1-8.

gations under the assumption that there are no possible risks that might strain GSE capital positions. This is exactly the behavior that has preceded the classic crises described by Kindleberger. In my opinion, GSE capital positions are undesirably thin and leave these firms unnecessarily vulnerable to surprise shocks. There is no way to predict what kind of shock might shake market confidence, but the reason a shock could have serious adverse effects is that F-F pursue a strategy of borrowing short and lending long, with a thin capital margin.

DANGERS OF BORROWING SHORT AND LENDING LONG

It has long been a canon of sound finance that a firm should not borrow short to finance long-term assets. There are two reasons for this principle. First, a financial firm exposes itself to interest-rate risk when the duration of assets and liabilities does not match. Second, a firm must continuously roll over short-term liabilities that are used to finance long-term assets.

Under the most conservative financial strategy, F-F would issue long-term bonds to match their long-term mortgage assets. The bonds, or a significant fraction of them, would have to be callable to protect against prepayment risk on mortgages. This classic, benchmark strategy could be refined in various ways, but the basic structure of the strategy is as described.

A financial institution following the classic strategy is protected against all interest-rate disturbances. There is no risk from interest-rate fluctuations because the duration of assets and liabilities match. Prepayment risk is handled by issuing callable bonds and then calling them when assets prepay. The institution's risk is confined to the credit risk on the assets. Credit risk on mortgages can be handled, as F-F in fact do very effectively, through a policy of geographic diversification, of not buying a significant number of high loan-to-value mortgages, and through the use of mortgage insurance and credit guarantees. The profitability of the financial institution then depends on the interest-rate spread between

the assets purchased and the bonds issued to finance them, at the time of the transaction.

F-F have not pursued the classic strategy but instead have financed a large fraction of their portfolios of long-term mortgages with short-term debt, in the order of 38 percent of the net mortgage portfolio or 34 percent of total assets. They hedge interest-rate risk by maintaining positions in interest-rate swaps. These contracts provide that, for example, Fannie Mae will pay a fixed rate of interest for the duration of the swap and receive a variable rate of interest, tied to the London Interbank offering rate, or LIBOR. Most swaps in the market use LIBOR as the reference rate in the swap contract, and so the GSEs' use of these contracts is perfectly standard market practice.

It is true that the combination of short liabilities and interest rate swaps synthetically creates, almost, the equivalent of a long-term, fixed-rate liability. There are two significant caveats that explain the "almost" and neither of these are adequately discussed in the annual reports of Fannie Mae and Freddie Mac.

The first caveat concerns basis risk, which is briefly mentioned in Freddie Mac's 2002 Annual Report (p. 76) but as far as I can tell not in Fannie Mae's 2002 Annual Report or its 2003 10K report. Basis risk arises whenever a hedging strategy relies on a contract that is not identical to the good being hedged. In the case of the GSEs, the yield on the short-term debt they issue may differ from LIBOR. More importantly, the spread of the agency debt yield over LIBOR may change, and has changed significantly in the past. The interest-rate stress tests reported by Fannie Mae and Freddie Mac do not consider this possibility.

It is not difficult to make a back-of-the-envelope calculation of exposure to basis risk. At the end of 2003, Fannie Mae had approximately \$335 billion of short-term debt swapped into fixed-rate long-term debt. Currently, 6-month agency paper trades about 10 basis points above U.S. Treasury 6-month obligations. However, that spread reached 50 to 70 basis points in the period from 1998 to 2001. Should the current spread rise from 10 basis points to 60 basis points for a sustained period, the extra 50 basis points would

cost Fannie Mae about \$1.7 billion in extra interest expense per year, which would reduce annual earnings by about 21 percent based on 2003 net income.

A 21 percent reduction in net income would not be enough to shake the firm; clearly, though, a larger increase in the spread would be a matter of serious concern. Such an increase could occur should the market come to distrust the creditworthiness of either Fannie Mae or Freddie Mac.

The second risk F-F run is that the credit markets might refuse to accept F-F paper. Every week, F-F must roll over roughly \$30 billion of maturing short-term obligations. Should the market come to fear the creditworthiness of either firm, F-F would be forced to liquidate non-mortgage assets to obtain funds to redeem maturing obligations. Fannie Mae's 10K report for 2003 contains a discussion of liquidity (pp. 113 ff) and reports a liquidity reserve of \$65 billion. This reserve is net of assets pledged as collateral. At the end of 2003, only \$487 million of short-term assets were pledged as collateral; the policy statement (p. 115 of 2003 10K report) that Fannie Mae will maintain a liquid reserve of at least 5 percent of total assets does not state whether the policy refers to unencumbered liquid assets. In the event of a crisis, Fannie Mae could find itself forced to collateralize its large derivatives position, which would leave a minimal liquid reserve should the markets become unreceptive to new issues. The fact is that F-F depend critically on continuous market access, and with their minimal capital positions that access could be denied without warning.

The strategy of financing short and managing interest-rate risk through swaps does not completely replicate the classic strategy. F-F are vulnerable to basis risk and impaired access to the market to roll over their maturing obligations.

RECEIVERSHIP/CONSERVATORSHIP AUTHORITY

Should either Fannie Mae or Freddie Mac become financially stressed, the only way to

avoid market chaos will be to have clear procedures in place, in advance, to handle the problem. Market uncertainty at the time of a crisis will quickly lead to a deeper and more extensive problem in the world's financial markets.

Given that F-F obligations are not guaranteed, the federal government needs to make clear that it intends to live up to the statement made by F-F when they issue securities, that the obligations are not guaranteed by the United States. To make this position credible, the government needs to have plans in place as to how to handle a crisis should one occur.

The recent announcement by the Office of Federal Housing Enterprise Oversight that it will develop conservatorship procedures is a welcome development because it increases the credibility of the claim F-F make regarding the absence of a federal guarantee of their obligations. As a complement to this step, the authority of the Secretary of Treasury to provide temporary funds, in the amount of \$2.25 billion each to Fannie Mae and Freddie Mac, should be repealed. This provision is too small to have any practical value in handling a crisis, and is of symbolic value only.

FEDERAL RESERVE EMERGENCY POWERS

I am acutely aware that should there be a market crisis, the Federal Reserve will have the responsibility to manage the problem. Just as many market participants apparently believe that GSE obligations have the implicit backing of the federal government, they may also believe that the Federal Reserve has all the powers necessary to manage a crisis. The Fed's successful efforts to handle the stock market crash in 1987, the near-insolvency of Long Term Capital Management in 1998, and the financial effects of the 9/11 tragedy all justifiably increase market confidence in the Federal Reserve. In the interest of a full understanding of the Federal Reserve's powers in the event of a crisis in the market for GSE obligations, I'll outline the Fed's powers as provided by the Federal Reserve Act.

FINANCIAL MARKETS

The Federal Reserve routinely makes loans to depository institutions. These are fully collateralized loans, subject to haircuts on the collateral to protect the Federal Reserve's position. To my knowledge, F-F have not negotiated standby lines of credit with banks to provide emergency funds in event of a crisis. Such agreements are common among firms that issue commercial paper, so that the firms can retire maturing obligations even if they suddenly find their access to the commercial paper market impaired. In an emergency, F-F could work with banks to provide credit and the Federal Reserve could in turn provide loans to banks under the primary credit facility of the discount window. These loans would have to be fully secured by good collateral.

The main point about managing a crisis through this mechanism, with F-F obtaining credit from banks and the Federal Reserve providing loans to the banks, is that the enormous scale of F-F obligations would strain the banking system. This mechanism might not suffice to handle a major crisis as the banks would insist that F-F post collateral. In a crisis, the mortgage market would be severely disrupted and mortgages and mortgage-backed securities would no doubt trade at lower prices, thus impairing the value of the collateral F-F could post. The decline in the value of F-F assets would strain their capital positions, and lead to fears that either or both Fannie Mae and Freddie Mac might become insolvent.

Under Section 13(3) of the Federal Reserve Act, Federal Reserve Banks have the authority to discount paper for individuals, partnerships or corporations. Direct lending to the GSEs would have to come under provisions of this part of the Federal Reserve Act. Critical provisions include a finding of unusual and exigent circumstances and an affirmative vote of not less than five members of the Board of Governors. The loans would have to be fully collateralized.

There has been no lending under this provision of the Federal Reserve Act since the 1930s. Such lending, were it to be authorized by the Board of Governors, would permit GSEs to redeem

maturing obligations and would, therefore, solve part of a crisis problem. However, such loans might not restore liquidity to GSE debt before redemption and would not per se restore normal functioning of the mortgage market. Clearly, Federal Reserve support for the GSEs would help to prevent a broadening crisis, but most likely would be incapable of preventing some considerable disruption.

The Federal Reserve has ample power to deal with a liquidity problem, by making collateralized loans as authorized by the Federal Reserve Act. The Fed does not have power to deal with a solvency problem. Should a solvency problem arise with any of the GSEs, the solution will have to be found elsewhere than through the Federal Reserve.

In a press release dated February 5, 2004,² the Board of Governors announced that effective July 2006 it would require that government-sponsored enterprises and international agencies have sufficient funds in their Federal Reserve accounts before the Federal Reserve would release funds for interest and redemption payments on securities issued by these entities. This change in practice will eliminate the daylight overdrafts routinely created today when GSEs make interest and redemption payments before depositing funds from sale of new securities. The Board's press release noted that the practice of permitting intraday credit "is inconsistent with that of private issuing and paying agents for their customers' securities." The policy change effective July 2006 will, therefore, align the Federal Reserve's practice with that accorded private entities, reflecting the private, though government-sponsored, status of the GSEs. The policy change will also reduce risk to the Federal Reserve System.

CONCLUDING COMMENTS

The reasons why it is important to strengthen the capital positions of the GSEs should be clear. It is also important that ambiguities as to the sta-

² See the press release on the Board of Governors' web site: www.federalreserve.gov/boarddocs/press/other/2004/20040205.

tus of the GSEs be cleared up, and that conservatorship procedures to deal with a crisis be put in place.

Many financial institutions seem not to understand the nature of the issues. It is interesting that GSE obligations trade at much smaller spreads over Treasuries at the short end of the maturity spectrum than at the long end. Investors in short-term obligations apparently believe that they are completely protected from credit risk because they will have enough warning to permit them to exit these obligations by letting them mature in a few months. The problem is that should a crisis occur, it will take hold so quickly that GSE obligations will in a matter of hours, or days, become illiquid. While any one holder of GSE debt can exit, not all holders together can exit at once. The economics of this market are similar to those of banking markets. A scramble to convert all bank deposits into cash cannot succeed in the aggregate because not enough cash exists to effect the conversion. Similarly, a scramble to convert GSE obligations into cash cannot succeed in the aggregate because the underlying mortgage assets cannot be quickly converted to cash. Mortgagors are under no obligation to prepay long-term mortgages.

Fannie Mae and Freddie Mac manage risks well, up to a point. But the underlying problem of financing long-term mortgages with short-term assets still exists. The risks may be passed along to others in the derivatives markets, but in the aggregate the risks have not been extinguished. The only way to manage these risks completely is through a combination of F-F substituting more long-term for short-term debt and maintaining stronger capital positions.

I note also that F-F have a powerful incentive to grow. They report returns on equity in the neighborhood of 30 percent per year. They are able to achieve these returns by exploiting the implicit federal guarantee of their obligations, which enables them to borrow at near Treasury rates despite their thin capital positions and invest in mortgages at private market rates. Their growth objectives insure that their scale will increase over time, unless they become subject to full private market incentives through convincing federal policies that lead to market recognition that the federal government will not guarantee GSE obligations in a crisis.